DOE/NE-ID-11182
Project No. 24573
Revision 2

U.S. Department of Energy
Idaho Operations Office

HWMA/RCRA Closure Plan for the CPP-648 Radioactive Solid and Liquid Waste Storage Tank System (VES-SFE-106)

August 2006

Idaho Cleanup Project

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Prepared for the
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ABSTRACT

This Hazardous Waste Management Act/Resource Conservation and Recovery Act closure plan for the Radioactive Solid and Liquid Waste Storage Tank System located in and adjacent to the Sludge Tank Control House (CPP-648), Idaho Nuclear Technology and Engineering Center, Idaho National Laboratory, was developed to meet the interim status closure requirements for a tank system. The system to be closed includes a tank and associated ancillary equipment that were determined to have managed hazardous waste. The CPP-648 Radioactive Solid and Liquid Waste Storage Tank System will be "clean closed" in accordance with the requirements of the Hazardous Waste Management Act/ Resource Conservation and Recovery Act as implemented by the Idaho Administrative Procedures Act 58.01.05.009 and 40 Code of Federal Regulations 265. This closure plan presents the closure performance standards and methods of achieving those standards for the CPP-648 Radioactive Solid and Liquid Waste Storage Tank System.

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ACRONYMS

BWTS	Basin Water Treatment System
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
COC	contaminant of concern
DEQ	State of Idaho Department of Environmental Quality
FFA/CO	Federal Facility Agreement and Consent Order
HWD	hazardous waste determination
HWMA	Hazardous Waste Management Act
ICP	Idaho Cleanup Project
IDAPA	Idaho Administrative Procedures Act
INL	Idaho National Laboratory
INTEC	Idaho Nuclear Technology and Engineering Center
LDR	land disposal restriction
PE	professional engineer
PEWE	process equipment waste evaporator
RCRA	Resource Conservation and Recovery Act
RWMC	Radioactive Waste Management Complex
TCLP	toxicity characteristic leaching procedure
TSDF	treatment, storage, and disposal facility
USC	United States Code
VCO	Voluntary Consent Order
WAG	Waste Area Group

HWMA/RCRA Closure Plan for the CPP-648 Radioactive Solid and Liquid Waste Storage Tank System (VES-SFE-106)

1. INTRODUCTION

This Hazardous Waste Management Act (HWMA) (State of Idaho 1983)/Resource Conservation and Recovery Act (RCRA) (42 United States Code [USC] 6901 et seq. 1976) closure plan has been prepared to address the closure of the CPP-648 Radioactive Solid and Liquid Waste Storage Tank System (VES-SFE-106), a RCRA interim status unit located at the Idaho Nuclear Technology and Engineering Center (INTEC), Idaho National Laboratory (INL)[a] Site. This closure plan addresses the CPP-648 Radioactive Solid and Liquid Waste Storage Tank System (hereinafter referred to as the VES-SFE-106 tank system), which includes the VES-SFE-106 waste tank and associated ancillary equipment and piping that were used to manage HWMA/RCRA-hazardous waste. Upon completion of the activities specified in this closure plan, the tank system will be certified as closed in accordance with interim status requirements of Idaho Administrative Procedures Act (IDAPA) 58.01.05.009 and 40 Code of Federal Regulations (CFR) 265, Subparts G and J.

This HWMA/RCRA closure plan includes a general description of the VES-SFE-106 tank system and a description of the system components for which decontamination or removal actions will be completed under closure. The current and maximum hazardous waste inventories are identified in the plan along with the applicable U.S. Environmental Protection Agency hazardous waste numbers. System components that managed HWMA/RCRA-hazardous waste will either be decontaminated to the site-specific action levels specified in this closure plan or removed and appropriately managed. The tank system will be considered HWMA/RCRA "clean closed" when the closure activities identified in this plan are complete, as certified by an independent, registered professional engineer (PE), and accepted by the State of Idaho Department of Environmental Quality (DEQ).

This plan was developed to address clean closure of the tank system in compliance with HWMA/RCRA interim status regulations. Residual radioactive contamination will be addressed under a separate regulatory authority.

a. On February 1, 2005, the Idaho National Engineering and Environmental Laboratory contract split, forming INL, which implements its continuing research mission, and Idaho Cleanup Project, which carries out the site's cleanup responsibilities.

2. FACILITY DESCRIPTION

2.1 Site Description

The INL Site encompasses approximately 2,276 km^2 (890 mi^2) on the Eastern Snake River Plain in southeastern Idaho, west of Idaho Falls. Within the laboratory complex are eight major applied engineering, interim storage, and research and development facilities. Established in 1949 as the National Reactor Testing Station, the INL continues to safely build, test, and operate various types of nuclear reactor facilities for the United States Government.

The INTEC is situated on the south-central portion of the INL site (Figure 2-1) and occupies an enclosed and secured area of approximately 1 km^2 (250 acres). Current work at INTEC includes receiving and storing spent nuclear fuel; environmental restoration; radiological deactivation, decontamination, and decommissioning activities; mixed waste treatment; and technology development (DOE-ID 1995).

2.2 Tank Description and Operational History

The VES-SFE-106 tank system was placed into service in 1972 and was used to store characteristically hazardous wastes that were generated as a result of spent nuclear fuel storage activities, including treatment of the basin water that provided radioactive shielding for the spent nuclear fuel. The CPP-603 fuel storage basin water was treated in the CPP-603 Basin Water Treatment System (BWTS), which circulated the water through ion exchange columns and sand filters and then back to the three storage basins. The waste generated by the BWTS was pumped to the VES-SFE-106 tank for storage (Figure 2-2). This waste stream was further treated by a clarification process within the tank (DOE-ID 2004a).

The VES-SFE-106 tank is a 25,000-gal waste storage and treatment tank constructed of Type 304 stainless steel (Figure 2-3). The tank is horizontal and cylindrical with domed ends and is located in a concrete vault that includes a sump. The vault was lined in 1997 with a chlorosulfonated polyethylene (hypalon) liner, which extends 4 ft 5 in. up the walls of the vault. The vault sump is constructed of stainless steel and is equipped with a bubbler probe level instrument. In the event of a spill from the tank, the sump can be pumped back to the tank or directly to the process equipment waste evaporator (PEWE) system (ISD-3, 2002).

The tank monitoring instrumentation is equipped with a high-level alarm that alerts the operator when the tank is near capacity (ISD-3, 2002). It is also equipped with a manhole, sampling and monitoring lines extending up to the ground level, an air vent line with a demister, and a high-efficiency particulate air filter (INEEL 1997). Solids settled in the VES-SFE-106 tank were periodically removed and disposed of; liquids were transferred to the PEWE system for evaporative volume reduction. The current sludge volume contained within the VES-SFE-106 tank is estimated at 5,000–7,000 gal (EDF-3983, 2003).

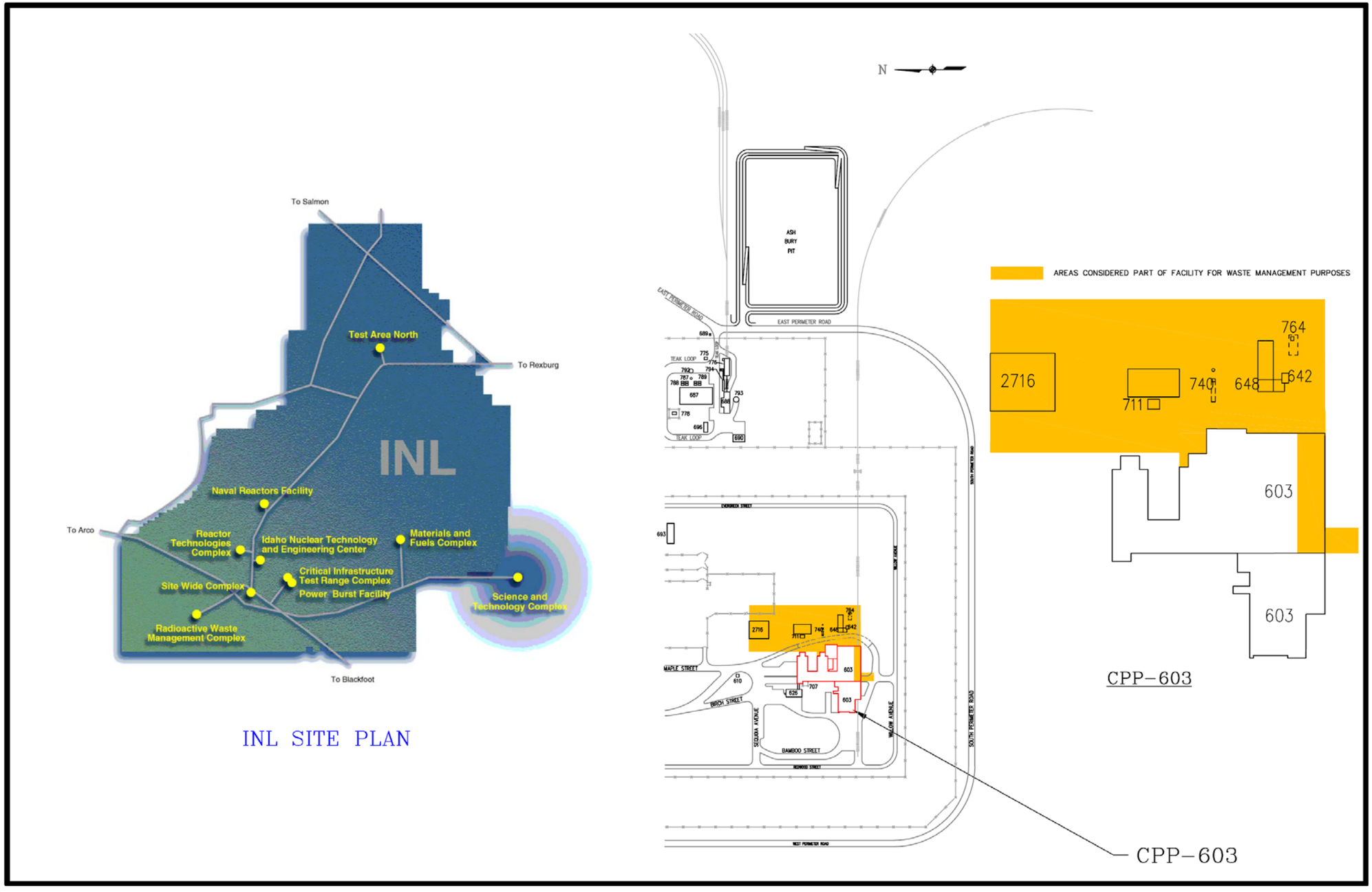

Figure 2-1. Map of the INL Site and INTEC CPP-603 area, including planned waste management areas.

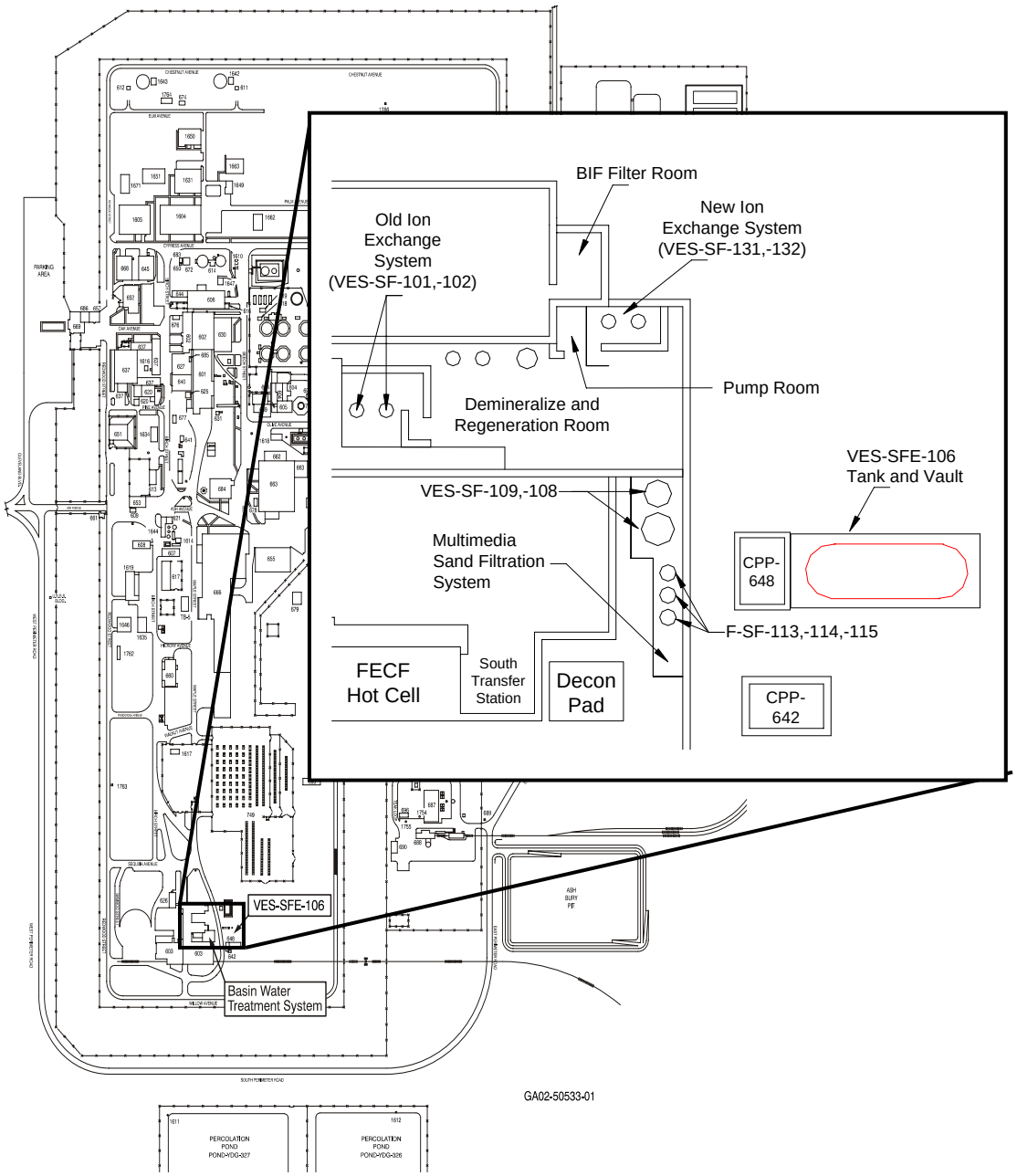

Figure 2-2. Location of the VES-SFE-106 tank system in relation to the associated CPP-603 systems.

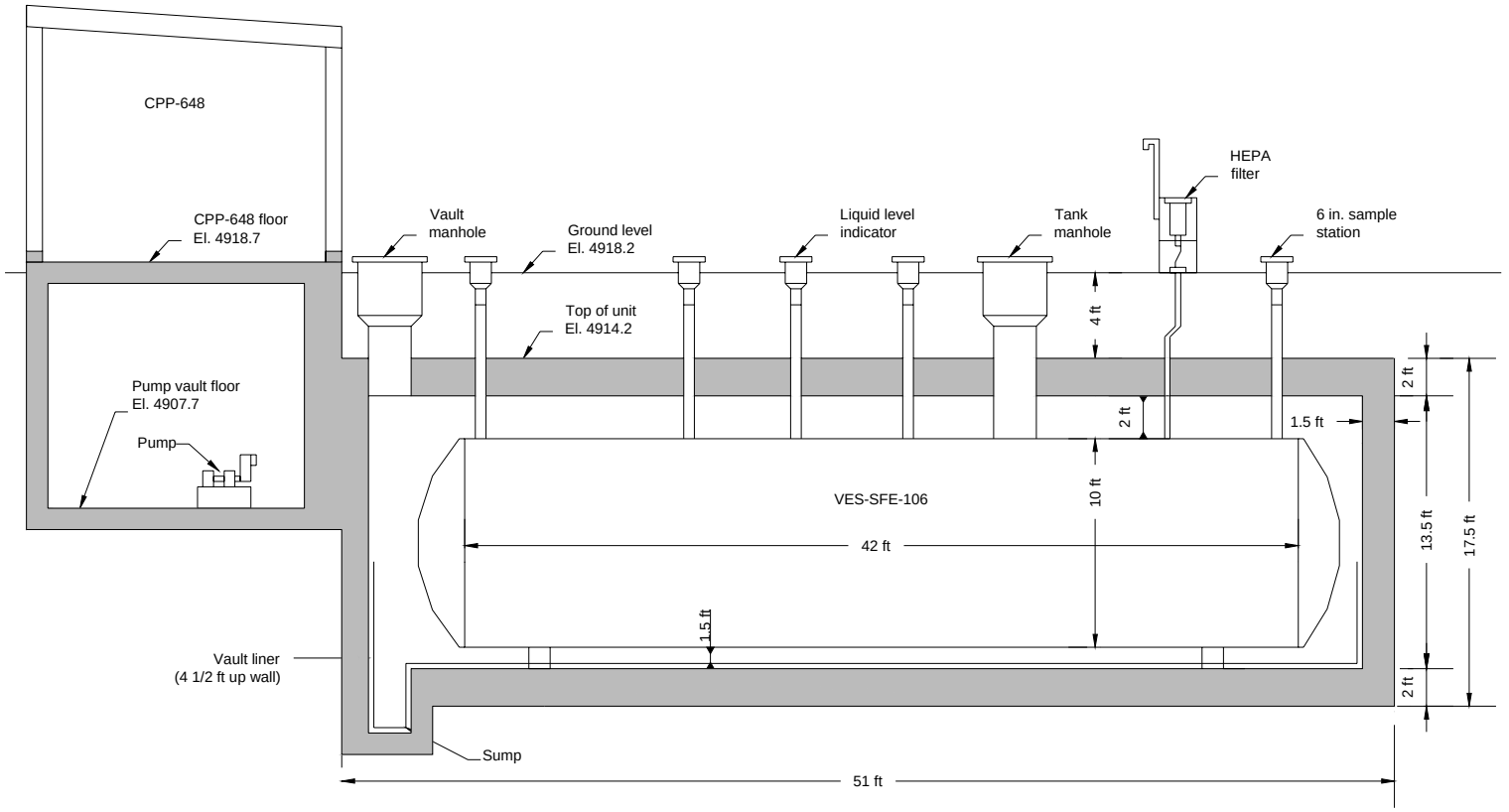

Figure 2-3. Elevated view of Tank VES-SFE-106.

2.3 Associated Piping and Ancillary Equipment

The tank system to be closed includes the radioactive solid and liquid waste storage tank (VES-SFE-106) and the associated ancillary piping and equipment that ties the tank system to the BWTS (DOE-ID 2004a), the VES-SFE-126 waste collection tank (INEEL 2000), and the PEWE system (DOE-ID 2003). Waste discharge piping from the old ion exchange vessels, the new ion exchange vessels, the sand filter system, and the BIF filter drain that discharge to VES-SFE-106 will be closed under this HWMA/RCRA closure plan. Piping and ancillary equipment within CPP-648 that managed or potentially managed hazardous waste will also be closed under this HWMA/RCRA closure plan. Discharge piping from the VES-SFE-106 waste tank to the PEWE system will also be closed to the point that it connects to the permitted system.

Piping and equipment considered ancillary to the VES-SFE-106 tank system will be addressed under this closure plan with the exception of those lines and equipment specified in Table 2-1, which did not manage HWMA/RCRA-hazardous waste. Lines 1” HAA-100392, 1” HAA-100393, and 1” HAA-100394 are stainless steel high-pressure air lines that managed only compressed air upstream of the first isolation valve, and lines 1/2” RWAM-155454 and 3/4” RWAR-155940 are stainless steel raw water lines that managed only raw water. Lines 1” BWA-100307 and 2” PLA-100308 are stainless steel basin water return lines that managed only clarified basin water that has been determined to be nonhazardous (EDF-2619, 2002; EDF-2621, 2001). The VES-SFE-106 filtered vent managed only off-gas exhausted from the VES-SFE-106 waste tank. Since the off-gas received by the unit was not a contained gas, the off-gas was not a solid waste subject to HWMA/RCRA regulations. The nonhazardous piping and ancillary equipment may be removed during closure activities.

Table 2-1. Nonhazardous piping and ancillary equipment.

Piping and Ancillary Equipment	Description
1” HAA-100392	Upstream of valve HAV-SFE-67
1” HAA-100393	Upstream of valve HAV-SFE-69
1” HAA-100394	Upstream of valve HAV-SFE-68
1/2” RWAM-155454	Upstream of valve RWV-SFE-151
3/4” RWAR-155940	Upstream of valve RWV-SFE-159
1” BWA-100307	Downstream from line 2” PLA-100308
2” PLA-100308	Downstream from valve PLV-SFE-42
VES-SFE-106 Filtered Vent	Surface vent connected to VES-SFE-106 via line 2” VGA-100336

2.4 System Boundaries

The system boundaries have been established to define the breakpoints between the VES-SFE-106 tank system and the BWTS and VES-SFE-126 closures, PEWE, and components of the system that did not manage hazardous waste. The VES-SFE-106 tank system closure boundaries are listed in Table 2-2 and shown on Schematic P-CLOS-VES-SFE-106 (Figure 2-4).

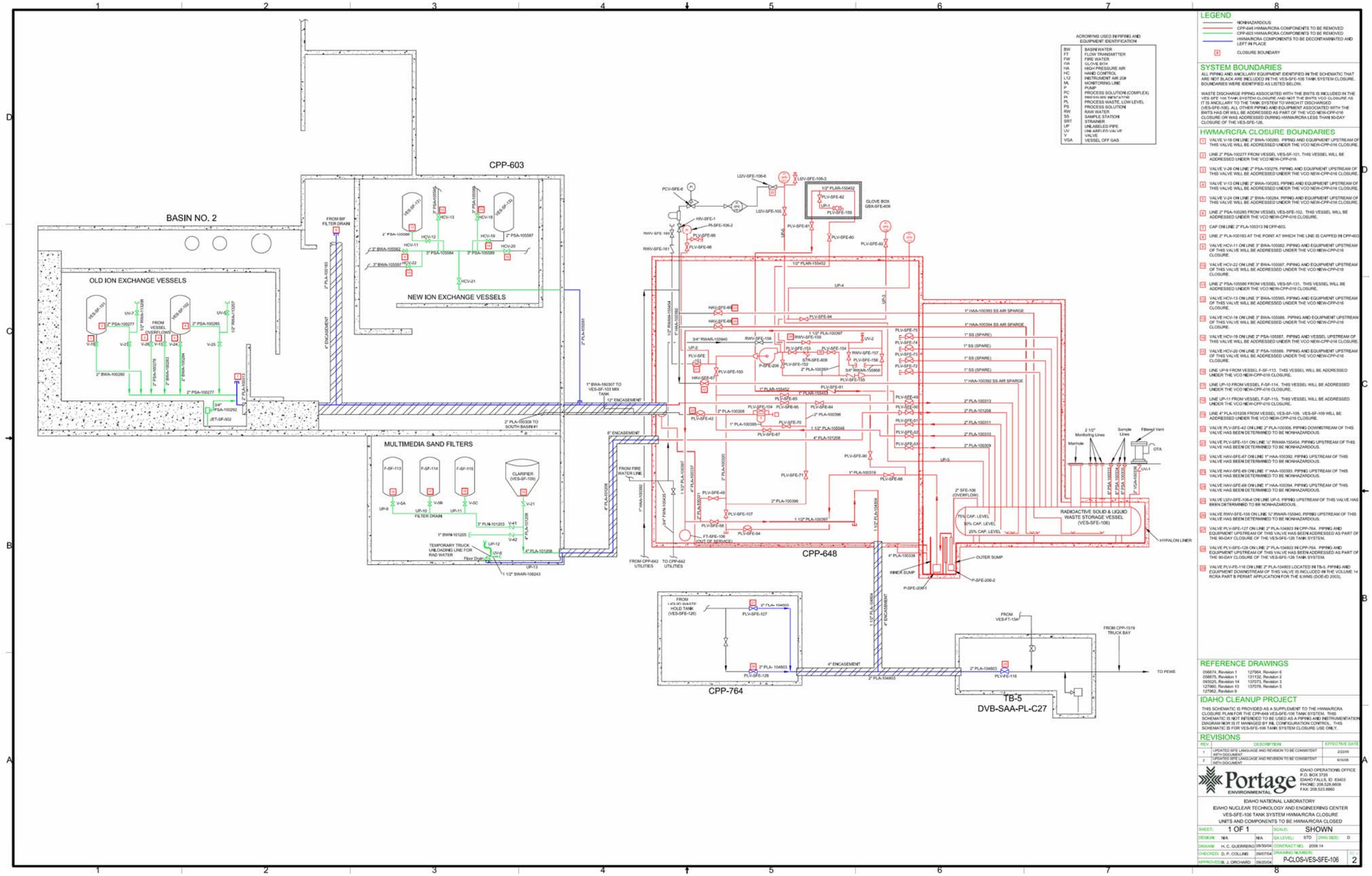

Figure 2-4. Schematic P-CLOS-VES-SFE-106. Units and components to be HWMA/RCRA closed.

Table 2-2. Closure boundaries.

Boundary No.	Associated System	Description
1	Old Ion Exchange	Valve V-18 on line 2” BWA-100280. Piping and equipment upstream of this valve will be addressed under Voluntary Consent Order (VCO) NEW-CPP-016 closure.
2	Old Ion Exchange	Line 2” PSA-100277 from vessel VES-SF-101. This vessel will be addressed under VCO NEW-CPP-016 closure.
3	Old Ion Exchange	Valve V-26 on line 2” PSA-100278. Piping and equipment upstream of this valve will be addressed under VCO NEW-CPP-016 closure.
4	Old Ion Exchange	Valve V-13 on line 2” BWA-100283. Piping and equipment upstream of this valve will be addressed under VCO NEW-CPP-016 closure.
5	Old Ion Exchange	Valve V-24 on line 2” BWA-100284. Piping and equipment upstream of this valve will be addressed under VCO NEW-CPP-016 closure.
6	Old Ion Exchange	Line 2” PSA-100285 from vessel VES-SFE-102. This vessel will be addressed under VCO NEW-CPP-016 closure.
7	Old Ion Exchange	Cap on line 2” PLA-100313 in CPP-603.
8	BIF	Line 2” PLA-100183 at the point at which the line is capped in CPP-603.
9	New Ion Exchange	Valve HCV-11 on line 3” BWA-105562. Piping and equipment upstream of this valve will be addressed under VCO NEW-CPP-016 closure.
10	New Ion Exchange	Valve HCV-22 on line 3” BWA-105597. Piping and equipment upstream of this valve will be addressed under VCO NEW-CPP-016 closure.
11	New Ion Exchange	Line 2” PSA-105586 from vessel VES-SF-131. This vessel will be addressed under VCO NEW-CPP-016 closure.
12	New Ion Exchange	Valve HCV-13 on line 3” BWA-105585. Piping and equipment upstream of this valve will be addressed under VCO NEW-CPP-016 closure.
13	New Ion Exchange	Valve HCV-18 on line 3” BWA-105588. Piping and equipment upstream of this valve will be addressed under the VCO NEW-CPP-016 closure.
14	New Ion Exchange	Valve HCV-19 on line 2” PSA-105587. Piping and vessel upstream of this valve will be addressed under VCO NEW-CPP-016 closure.
15	New Ion Exchange	Valve HCV-20 on line 3” PSA-105589. Piping and equipment upstream of this valve will be addressed under VCO NEW-CPP-016 closure.
16	Sand Filtration	Line UP-9 from vessel F-SF-113. This vessel will be addressed under VCO NEW-CPP-016 closure.
17	Sand Filtration	Line UP-10 from vessel F-SF-114. This vessel will be addressed under the VCO NEW-CPP-016 closure.
18	Sand Filtration	Line UP-11 from vessel F-SF-115. This vessel will be addressed under VCO NEW-CPP-016 closure.
19	Sand Filtration	Line 4” PLA-101208 from vessel VES-SF-109. VES-SF-109 will be addressed under VCO NEW-CPP-016 closure.
20	VES-SFE-106	Valve PLV-SFE-42 on line 2” PLA-100308. Piping downstream of this valve has been determined to be nonhazardous.

Table 2-2. (continued).

Boundary No.	Associated System	Description
21	VES-SFE-106	Valve PLV-SFE-151 on line 1/2” RWAM-155454. Piping upstream of this valve has been determined to be nonhazardous.
22	VES-SFE-106	Valve HAV-SFE-67 on line 1” HAA-100392. Piping upstream of this valve has been determined to be nonhazardous.
23	VES-SFE-106	Valve HAV-SFE-69 on line 1” HAA-100393. Piping upstream of this valve has been determined to be nonhazardous.
24	VES-SFE-106	Valve HAV-SFE-68 on line 1” HAA-100394. Piping upstream of this valve has been determined to be nonhazardous.
25	VES-SFE-106	Valve LI2V-SFE-106-6 on line UP-5. Piping upstream of this valve has been determined to be nonhazardous.
26	VES-SFE-106	Valve RWV-SFE-159 on line 3/4” RWAR-155940. Piping upstream of this valve has been determined to be nonhazardous.
27	VES-SFE-126	Valve PLV-SFE-127 on line 2” PLA-104803 in CPP-764. Piping and equipment upstream of this valve has been addressed as part of the 90-day closure of the VES-SFE-126 tank system.
28	VES-SFE-126	Valve PLV-SFE-128 on line 2” PLA-104803 in CPP-764. Piping and equipment upstream of this valve has been addressed as part of the 90-day closure of the VES-SFE-126 tank system.
29	PEWE	Valve PLV-FE-116 on line 2” PLA-104803 located in TB-5. Piping and equipment downstream of this valve is included in the Volume 14 RCRA Part B Permit Application for the INL Liquid Waste Management System (DOE-ID 2003).

3. CURRENT AND MAXIMUM WASTE INVENTORIES AND CHARACTERISTICS

The VES-SFE-106 tank system manages characteristically hazardous waste that carries the HWMA/RCRA hazardous waste number D006 (cadmium). Based on a review of operations and activities conducted at CPP-603, no listed waste was discharged to the VES-SFE-106 tank. This tank has a maximum waste inventory of 25,000 gal, but is currently estimated to contain approximately 5,000–7,000 gal of hazardous sludge (EDF-3983, 2003). Residual liquids in the VES-SFE-106 tank are nonhazardous based on the wastes discharged to the tank from the BWTS and the basins (i.e., HWMA/RCRA-hazardous solids and basin water) (EDF-2619, 2002; EDF-2621, 2001). Liquid wastes generated during HWMA/RCRA closure activities will be characterized and disposed of based on a hazardous waste determination (HWD).

The estimated maximum volume of the piping and ancillary equipment associated with the VES-SFE-106 tank system is 570 gal (see Table 3-1). However, the lines associated with the VES-SFE-106 tank are generally sloped to gravity-feed liquids to and from the tank; therefore, the associated piping is assumed to be free of liquids with little or no residual solids.

The HWMA/RCRA contaminants of concern (COCs), based on analytical data from historical sampling results from the VES-SFE-106 waste tank and the characterization of associated VCO units (constituents detected during analysis), are 2-butanone, 4-methyl-2-pentanone, aluminum, antimony, arsenic, barium, beryllium, cadmium, chromium, lead, mercury, nickel, selenium, silver, thallium, toluene, vanadium, and zinc.

Table 3-1. VES-SFE-106 tank system current and maximum waste inventory.

Description	Current Waste Inventory	Maximum Waste Inventory
VES-SFE-106 waste tank sludge	5,000–7,000 gal	25,000 gal
Ancillary piping	Residual	570 gal

4. CLOSURE PERFORMANCE STANDARDS

This section describes the performance standards for closure of the VES-SFE-106 tank system (IDAPA 58.01.05.009 [40 CFR 265.111 and 265.197]) and the activities that will be conducted to demonstrate that the closure performance standards have been met.

4.1 Regulatory Closure Performance Standards

The closure performance standards identified in IDAPA 58.01.05.009 (40 CFR 265.111 and 265.197) applicable to the VES-SFE-106 tank system closure are:

1. The owner or operator must close the facility in a manner that minimizes the need for further maintenance (IDAPA 58.01.05.009 [40 CFR 265.111(a)]).

2. The owner or operator must close the facility in a manner that controls, minimizes, or eliminates to the extent necessary to protect human health and the environment, post-closure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere (IDAPA 58.01.05.009 [40 CFR 265.111(b)]).

3. The owner or operator must close the facility in a manner that complies with the closure requirements of this subpart, including, but not limited to, the requirements of 40 CFR 265.197, 265.228, 265.258, 265.280, 265.310, 265.351, 265.381, 265.404, and 265.1102 (IDAPA 58.01.05.009 [40 CFR 265.111(c)]).

4.2 Required Activities for Achieving Closure Performance Standards

The VES-SFE-106 tank system closure and waste management activities to be conducted under HWMA/RCRA closure are described in detail in Section 5 of this closure plan. The closure performance standards will be achieved by the following measures.

4.2.1 Standard 1

The owner or operator must close the facility in a manner that minimizes the need for further maintenance (IDAPA 58.01.05.009 [40 CFR 265.111(a)]).

The activities required to meet this standard are:

- The hazardous waste inventory will be removed and disposed of

- Tank system components undergoing HWMA/RCRA closure will either be decontaminated to the site-specific action levels specified in this HWMA/RCRA closure plan or will be removed and disposed of.

4.2.2 Standard 2

The owner or operator must close the facility in a manner that controls, minimizes, or eliminates to the extent necessary to protect human health and the environment, post-closure escape of hazardous

waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products to the ground or surface waters or to the atmosphere (IDAPA 58.01.05.009 [40 CFR 265.111(b)]).

The activities required to meet this standard are:

- The hazardous waste inventory will be removed and disposed of
- Tank system components undergoing HWMA/RCRA closure will either be decontaminated to the site-specific action levels specified in this HWMA/RCRA closure plan or will be removed and disposed of.

4.2.3 Standard 3

At closure of a tank system, the owner or operator must remove or decontaminate all waste residuals, contaminated containment system components (liners, etc.), contaminated soils, and structures and equipment contaminated with waste, and manage them as hazardous waste, unless §261.3(d) of this Chapter applies. The closure plan, closure activities, cost estimates for closure, and financial responsibility for tank systems must meet all of the requirements specified in subparts G and H of this part (IDAPA 58.01.05.009 [40 CFR 265.197(a)]).

The activities that will be conducted to close the tank system in accordance with 40 CFR 265.197(a) are:

- The hazardous waste inventory will be removed and disposed of.
- Tank system components undergoing HWMA/RCRA closure will either be decontaminated to the site-specific action levels specified in this HWMA/RCRA closure plan or will be removed and disposed of.
- Soils associated with buried piping that is not secondarily contained (i.e., lines UP-13 and 2" PLA-105591) will be addressed by performing an integrity evaluation on the piping. If the integrity evaluation demonstrates that no release to the environment has occurred, then no further actions with regard to potentially contaminated soils associated with this piping will be conducted as part of HWMA/RCRA closure activities. If integrity of the piping is not verified, soil samples will be collected in accordance with the provisions of the FSP associated with this closure plan (ICP 2006). Soils associated with these lines are included within the boundaries of an established Federal Facility Agreement and Consent Order (FFA/CO) (DOE-ID 1991) Sites CPP-08/09, "Basin Filter System Line Failure and Soil Contamination at Northeast Corner of CPP-603," and CPP-10, "CPP-603 Plastic Line Leak."
- Soils associated with the CPP-648 building are included within the boundaries of an established FFA/CO Site CPP-11, "CPP-603 Sludge and Water Release," and will be subject to characterization under this HWMA/RCRA closure once removal of the CPP-648 building and VES-SFE-106 tank vault is complete. Provisions for sampling and analysis of these soils under HWMA/RCRA closure are included in the FSP associated with this closure plan (ICP 2006). Soil samples will be collected from areas associated with CPP-648 following removal of the concrete.

  The sampling of soils associated with the CPP-648 building may be coordinated with planned Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) (42 USC 9601 et seq. 1980) activities. Should HWMA/RCRA closure and CERCLA activities be coordinated, soil samples will be collected following completion of soil remediation activities.

Provisions for sampling soils post-CERCLA remedial actions are included in the FSP associated with this closure plan (ICP 2006).

The activities that will be conducted to close the tank system in accordance with 40 CFR 265.197(b) and (c) are:

- Analytical data for soils located within the established FFA/CO sites will be provided to the CERCLA program (i.e., Waste Area Group [WAG] 3) for evaluation as part of ongoing and/or planned remedial activities under the FFA/CO (DOE-ID 1991, 1999). No further actions with regard to these soils will be required to certify closure of the VES-SFE-106 tank system. Remedial investigation and/or remedial activities with respect to the soils addressed during HWMA/RCRA closure will be completed under the provisions of the FFA/CO (DOE-ID 1991). A summary of validated analytical data resulting from the sampling specified in the FSP will be included in the PE certification for closure of the VES-SFE-106 tank system.

5. CLOSURE ACTIVITIES

This closure plan describes the methods for closing the VES-SFE-106 tank system per the interim status tank system closure performance standard requirements of IDAPA 58.01.05.009 (40 CFR 265, Subparts G and J). The tank system will be closed by decontamination or removal and disposition of the equipment subject to closure. The following subsections describe closure activities, waste management activities, and required closure documentation to satisfy the tank system closure performance standards (see Section 4).

The tank, ancillary equipment, and piping associated with the VES-SFE-106 tank system are to be closed under HWMA/RCRA by removal of the VES-SFE-106 tank, and decontamination or removal of ancillary equipment and piping. Tank system components undergoing HWMA/RCRA closure will either be decontaminated to the site-specific action levels specified in this HWMA/RCRA closure plan or will be removed and disposed of to the extent practicable. Compliance with the performance standards for the VES-SFE-106 tank system units that will be decontaminated will be demonstrated by sampling the final rinsate solutions from the decontamination efforts and comparing the resulting analytical data with the site-specific action levels provided in Table 5-1.

Water will be used for equipment decontamination. Water is the medium through which the hazardous constituents, in the form of sludge solids, were transferred to the units being closed. The decontamination system is designed to provide high-pressure water to the units being decontaminated, thus washing and mobilizing residual hazardous solids remaining within the units.

The action levels presented in Table 5-1 were developed to provide specific criteria to demonstrate that the tanks, piping, and ancillary equipment, subsequent to completion of closure activities, are left in a state that is protective of human health and the environment (Orchard 2004). Rinsate sampling will be conducted in accordance with the *Quality Assurance Project Plan for Waste Area Groups 1, 2, 3, 4, 5, 6, 7, 10, and Deactivation, Decontamination, and Decommissioning* (DOE-ID 2004b) and the *Field Sampling Plan for the HWMA/RCRA Closure Addressing the CPP-648 Radioactive Solid and Liquid Waste Storage Tank System* (ICP 2006).

Table 5-1. Contaminant of concern and corresponding site-specific action levels.

Constituent of Concern	Action Level (mg/L)	Constituent of Concern	Action Level (mg/L)
2-Butanone	1.7E+02	Lead	4.0E+00
4-Methyl-2-pentanone	2.8E+03	Mercury	1.6E–01
Aluminium	9.9E+04	Nickel	2.4E+03
Antimony	4.8E+01	Selenium	7.8E–01
Arsenic	1.6E+00	Silver	4.0E+00
Barium	8.0E+01	Thallium	7.9E+00
Beryllium	1.2E+02	Toluene	5.0E+02
Cadmium	8.0E–01	Vanadium	8.4E+02
Chromium	3.5E+00	Zinc	3.6E+04

5.1 Removal of Hazardous Waste Inventory

The VES-SFE-106 tank contains a waste heel approximately 24 in. in depth that consists of a flocculent upper layer and a denser lower layer. The tank also contains debris including discarded ventilation ducting, pieces of rope (entwined with internal tank structure), and other miscellaneous materials that are not visible due to the sludge layer.

The VES-SFE-106 tank sludge heel will be removed by mixing or sluicing the heel to fluidize the sludge. Once the sludge has been mixed and fluidized, it will be transferred to containers that are compatible with the waste for treatment and subsequent disposal. To render the fluidized characteristically hazardous sludge nonhazardous, grout will be blended with the fluidized sludge in the container, which will then allowed to cure. A representative sample(s) of the stabilized waste form will be collected and analyzed for RCRA toxicity characteristic leaching procedure (TCLP) metals in compliance with SW-846 (EPA 2006) protocol to ensure that the treated waste form meets the applicable treatment standards. Specific details regarding analysis of the stabilized waste form (e.g., parameters, test methods, sampling method, frequency) will be provided to the independent PE as part of closure certification. If the stabilized waste form is determined to be nonhazardous per RCRA, the corresponding container(s) will be transported to the INL Radioactive Waste Management Complex (RWMC) for disposal. If the stabilized waste form is determined to be RCRA hazardous or fails to meet applicable land disposal restriction (LDR) treatment standards, the corresponding container will be transported to an appropriate storage facility pending identification of an acceptable disposal facility. Dewatered liquids, if any, will undergo a HWD and be appropriately disposed of.

5.2 Removal of Tank and CPP-648

The VES-SFE-106 tank will be removed and managed in accordance with HWMA/RCRA regulations once the residual hazardous waste inventory has been removed. Piping connected to the VES-SFE-106 tank, pumps, and sumps will be cut and removed. The tank will either be removed in one piece or sized into manageable pieces. The tank, sumps, pumps, piping, and CPP-648 structure, including the VES-SFE-106 vault and vault liner, will be removed and managed based on a HWD. Soils beneath CPP-648 will be sampled and managed in accordance with Subsection 5.4 of this document

5.3 Closure of Ancillary Piping and Equipment

Ancillary piping and equipment associated with the VES-SFE-106 tank system have been organized into three groups based upon location: piping and equipment located within CPP-648, piping and equipment located within CPP-603, and piping that is buried. Ancillary piping and equipment included in each of these three groups are listed in Tables 5-2, 5-3, and 5-4, and are discussed further in the following subsections.

5.3.1 CPP-648 and CPP-603

Unless otherwise specified, accessible piping and equipment located in CPP-648 and CPP-603 will be removed and managed based on a HWD in lieu of decontamination. Removed materials will be sized, as necessary, and placed in approved waste shipping containers for transportation and subsequent disposal. If removal is impractical based on field conditions, components may be decontaminated, as specified in Subsection 5.3.2, rather than removed.

Table 5-2. CPP-648 HWMA/RCRA components to be removed.

Piping and Ancillary Equipment	Start	End
2” PLA-100308	Existing Cap	PLV-SFE-42
2” PLA-100309	VES-SFE-106	1 1/2” PLA-105548
2” PLA-100310	VES-SFE-106	1 1/2” PLA-105548
2” PLA-100311	VES-SFE-106	1 1/2” PLA-105548
2” PLA-100313	CPP-648 Boundary	VES-SFE-106
1” PLA-100319	Vault Sump	2” PLA-100320
2” PLA-100320	Existing Cap	2” PLA-100308
2” PLA-100321	1 1/2” PLA-100397	2” PLA-100320
Manhole	VES-SFE-106	Ground Surface
6” PSA-100333	VES-SFE-106	Ground Surface
6” PSA-100334	VES-SFE-106	Ground Surface
6” PSA-100335	VES-SFE-106	Ground Surface
2” VGA-100336	VES-SFE-106	Ground Surface
4” PLA-100337	12” Encasement (nonhazardous)	Vault Sump
1” PLA-100395	Filter	2” PLA-100396
2” PLA-100396	2” PLA-100320	2” PLA-100313
1 1/2” PLA-100397	2” PLA 100397	1 1/2” PLA 104804
2” PLA-100397	P-SFE-206	1 1/2” PLA-100397
2” PLA-101208	PLV-SFE-50	VES-SFE-106
4” PLA-101208	CPP-648 Boundary	PLV-SFE-50
1 1/2” PLA-104804	Existing Cap	CPP-648 Boundary
1 1/2” PLA-105548	JCT 100309/100310/100311	P-SFE-206
1/2” PLAR-155452	P-SFE-206	1” PLAR-155452
1” PLAR-155452	1/2” PLAR-155452	2” PLA-100313
1” PLAR-155453	1” PLA-100319	1 1/2” PLA-105548
1/2” RWAM-155454	PLV-SFE-151	1 1/2” PLA 105548
3/4” RWAR-155940	Existing Cap	RWV-SFE-159
3/4” RWAR-155956	1 1/2” PLA-100397	3/4” RW-AR-155940
1” HAA-100393	HAV-SFE-69	VES-SFE-106
1” HAA-100394	HAV-SFE-68	VES-SFE-106
1” HAA-100395	HAV-SFE-67	VES-SFE-106
1” SS SPARE-1	Existing Cap	VES-SFE-106
1” SS SPARE-2	Existing Cap	VES-SFE-106
1” SS SPARE-3	Existing Cap	VES-SFE-106
1” SS SPARE-4	Existing Cap	VES-SFE-106
2 1/2” ML	VES-SFE-106	Ground Surface
2 1/2” ML	VES-SFE-106	Ground Surface
2 1/2” ML	VES-SFE-106	Ground Surface
UP-1	1/2” PLAR-155452	PLV-SFE-159

Table 5-2. (continued).

Piping and Ancillary Equipment	Start	End
UP-2	1/2” RWAM-155454	PI-SFE-106-2
UP-3	2” PLA-100397	PI-SFE-106
UP-4	UP-3	PI-SFE-111
UP-5	VES-SFE-106	PI-SFE-107-1
2” SFE-106 overflow	VES-SFE-106	Vault Sump
4” PLA-100338	Embedded in 648 Concrete	Vault Sump
Pump P-SFE-206	CPP-648 Pump Room	
Pump P-SFE-206-1	Vault Sump	
Pump P-SFE-206-2	Vault Sump	

Boundary = The exterior structural component of the building where the piping exits the building (i.e., floor, wall, etc.).
IE = Ion exchange system.
JCT =Junction.
ML = Monitoring line.
UP = Unlabeled pipe.
UV = Unlabeled valve.

Table 5-3. CPP-603 HWMA/RCRA components to be removed.

System	Piping and Ancillary Equipment	Start	End
New IE	3” BWA-105562	HCV-11	3” PSA 105584
	3” PSA-105584	JCT 105562/105597	2” PLA 105591
	3” PSA-105585	HCV-13	3” PSA 105584
	2” PSA-105586	VES-SF-131	3” BWA 105584
	2” PSA-105587	HCV-19	3” PSA 105589
	3” PSA-105588	HCV-18	3” PSA 105589
	3” PSA-105589	HCV-20	2” PLA 105591
	2” PLA-105591	JCT 105584/105589	CPP-603 Boundary
	3” BWA-105597	HCV-22	3” PSA 105584
Old IE	2” PLA-100277	VES-SF-101	2” PLA 100313
	2” PSA-100278	V-26	2” PSA-100277
	2” BWA-100280	V-18	2” PSA-100277
	2” BWA-100283	V-13	2” PSA-100277
	2” BWA-100284	V-24	2” PSA-100277
	2” PSA-100285	VES-SF-102	2” PSA-100277
	3/4” PSA-100292	Old IE Sump	2” PLA 100313
	1/2” RWA-113207	Inlet	2” PSA-100285
	1/2” RWA-113208	Inlet	2” PSA-100277
	JET-SF-502		

Table 5-3. (continued).

System	Piping and Ancillary Equipment	Start	End
Sand Filtration	3” PLN-101203	UP-9	4” PLA 101208
	1” BWN-101205	Existing Cap	4” PLA 101208
	4” PLA-101208	VES-SF-109	CPP-603 Boundary
	UP-9	F-SF-113	3” PLN-101203
	UP-10	F-SF-114	3” PLN-101203
	UP-11	F-SF-115	3” PLN-101203
	UP-12	Hose Connection	1 1/2” SWAR-108243
	1 1/2” SWAR-108243	Hose Connection	Floor Drain

Boundary = The exterior structural component of the building where the piping exits the building (i.e., floor, wall, etc.).
IE = Ion exchange system.
JCT =Junction.
ML = Monitoring line.
UP = Unlabeled pipe.
UV = Unlabeled valve.

5.3.2 Buried Lines

The lines that transferred wastes between the BWTS and the VES-SFE-106 tank, PEWE, and VES-SFE-126 tank systems are buried lines (see Table 5-4). These buried lines, with the exception of lines UP-13 and 2” PLA-105591, are secondarily contained in stainless steel encasement piping outside of the associated buildings. There is no evidence of a release from these buried lines; therefore, no specific closure activities will be taken for the secondary containment encasement piping. Due to the inaccessibility of these lines, they will be decontaminated and abandoned in place. An integrity evaluation will be conducted to verify the integrity of the piping that is not secondarily contained prior to decontamination. The line integrity will be evaluated using a pressure decay test or comparable method of integrity determination. If the integrity of the piping is not confirmed, the piping will be removed and samples of the underlying soils will be collected in accordance with the provisions of the FSP associated with this closure (ICP 2006).

Piping that is to remain in place will be iteratively decontaminated in such a manner that the surfaces that were contacted by HWMA/RCRA-hazardous waste are contacted by the decontamination solution. Successful piping decontamination will be demonstrated by sampling the final rinsate solution and comparing the resulting analytical data with the site-specific action levels (Table 5-1). If the concentrations of COCs detected in the final rinsate liquid indicate that the action levels have not been exceeded, then the piping has been decontaminated sufficiently to achieve closure. Provisions for sampling and analysis of the rinsate under HWMA/RCRA closure are included as Subunit 1 in the FSP (ICP 2006). Piping may be removed and managed based on a HWD in lieu of decontamination.

The buried lines in Table 5-4 are grouped into three piping sections. Each piping section includes lines that are connected and will be integrity tested and sampled as individual sections. The three piping sections are: the BWTS section, which includes lines 2” PLA-100183, 2” PLA-100313, and 2” PLA-105591; the PEWE section, which includes lines 2” PLA-104803 and 1 1/2” PLA-104804; and the sand filtration section, which includes lines 4” PLA-101208 and UP-13.

Table 5-4. Buried lines to be decontaminated.

Piping Sections	Piping	Start	End	Volume (gal)
BWTS Section	2” PLA-100183	Existing Cap	2” PLA-100313	7
	2” PLA-100313	Existing Cap	CPP-648 Boundary	9
	2” PLA-105591[a]	CPP-603 Boundary	2” PLA-100313	6
PEWE Section	2” PLA-104803	PLV-SFE-127 and -128	PLV-FE-116	285
	1 1/2” PLA-104804	CPP-648 Boundary	2” PLA-104803	7
Sand Filtration Section	4” PLA-101208	CPP-603 Boundary	CPP-648 Boundary	37
	UP-13[a]	Embedded Floor Drain	4” PLA-101208	1

Boundary = The exterior structural component of the building where the piping exits the building (i.e., floor, wall, etc.).
IE = Ion exchange system.
UP = Unlabeled pipe.
a. Buried piping that is not secondarily contained. This piping will be subjected to an integrity evaluation prior to decontamination. If integrity of the piping cannot be confirmed, the piping will be removed and samples of the underlying soils collected in accordance with the provisions of the FSP associated with this closure (ICP 2006).

Following decontamination, buried piping will be inspected using direct visual inspection or remote video inspection techniques, as technically practicable, to determine if bulk hazardous waste remains in the piping system following decontamination. Normal scaling associated with liquid waste piping systems and residual staining may be present. Small amounts of residue and particles may also be present within the piping, provided that such residues and/or particles do not exceed 5% of the volume of any 1-ft piping length. Should it be determined, based on the inspection, that bulk hazardous waste has not been removed from the system, more aggressive decontamination methods (e.g., high-pressure wash and steam) may be employed, or the buried lines may be removed and managed based on a HWD rather than continuing with decontamination efforts.

5.4 Soils

Soils associated with VES-SFE-106 tank system components undergoing closure are included within the boundaries of one of the established FFA/CO sites and will be subject to characterization under HWMA/RCRA closure once removal of the CPP-648 structure is completed and if integrity of buried piping that is not secondarily contained cannot be confirmed. Remedial investigation and/or remedial activities with respect to these soils will be completed under the provisions of the FFA/CO (DOE-ID 1991). Completion of these FFA/CO activities will not be a criterion for closure certification. However, Building CPP-648 HWMA/RCRA closure activities and CERCLA remedial actions may be conducted concurrently. In such case, HWMA/RCRA closure samples of soils underlying Building CPP-648 will be collected following completion of CERCLA remedial actions (i.e., soil removal) and provided to the ICP CERCLA program for evaluation as part of ongoing and/or planned remedial actions. Provisions for sampling and analysis of these soils under HWMA/RCRA closure are included in the FSP (ICP 2006). Soil samples will be collected within the timeframe specified in the schedule identified in Section 6. A summary of the validated analytical data resulting from the sampling specified in the FSP will be included in the PE certification for closure of the INTEC Liquid Radioactive Waste Treatment Subsystem. No further actions with regard to these soils will be required to certify closure of the VES-SFE-106 tank system.

5.5 Waste Management

As required by IDAPA 58.01.05.009 (40 CFR 265.114), contaminated equipment and structures must be disposed of or decontaminated in accordance with HWMA/RCRA requirements. Waste

generated during closure activities may include nonhazardous industrial waste, nonhazardous radioactive waste, and mixed waste (both radioactive and HWMA/RCRA hazardous). Closure-generated wastes will undergo a HWD in accordance with IDAPA 58.01.05.006 (40 CFR 262.11). Generator requirements of IDAPA 58.01.05.006 (40 CFR 262) will be met (an extension to the 90-day accumulation period is being requested). Table 5-5 identifies the anticipated waste streams that will be generated during HWMA/RCRA closure of the VES-SFE-106 tank system and the identified disposal pathways.

Table 5-5. Anticipated waste streams and disposal pathways.

Waste Stream	Description	Anticipated Disposal Pathway
Industrial Waste	Personal protective equipment/other miscellaneous wastes	INL landfill complex
Radiological Waste (Low-Level Waste)	Personal protective equipment/other miscellaneous wastes	RWMC (radiological only)
	VES-SFE-106 tank	RWMC (radiological only)
	Decanted water from waste inventory removal	PEWE
Mixed Low-Level Waste	Dewatered solids from the VES-SFE-106 tank system	Stabilization to meet LDRs and disposal at the RWMC
	VES-SFE-106 tank, piping, and other ancillary equipment determined to be hazardous and removed during VES-SFE-106 tank system closure activities	Storage at RCRA-permitted treatment, storage, and disposal facility (TSDF) or off-Site treatment and disposal at a RCRA-permitted TSDF
	Decontamination solutions	PEWE

Waste and waste containers may be stored within the facility during closure activities. A 90-day timeframe is stipulated in IDAPA 58.01.05.006 [40 CFR 262.34(a)(1)] for removal of hazardous waste from the facility to an appropriate storage/disposal facility. Greater than 90-day storage is necessitated by the nature of the wastes being managed (mixed radioactive waste) and the treatment that will be conducted as part of closure activities. An 180-day extension to this timeframe is requested to allow for the consolidation of similar waste streams generated during VES-SFE-106 closure activities; treatment of the hazardous waste removed from the VES-SFE-106 tank system, including dewatering, grouting, verification sampling, and data validation; completing characterization of the various waste matrices for disposal; development of radioactive source terms; sampling and receipt of analytical data from the laboratory; and identification of disposition pathways.

Closure-generated wastes will be placed in appropriate containers and will be managed/treated within the facility. Storage vessels used to accumulate HWMA/RCRA hazardous liquid wastes will be secondarily contained. No soils will be managed as waste under this closure plan.

The HWMA/RCRA-regulated closure-generated waste may be managed, treated (solids), packaged, and stored within the facility being closed, as defined in this closure plan, provided the following waste management controls are implemented:

- Wastes generated will be managed within the facility

- Containers are compatible with the waste and the containers are closed unless being filled
- Containers are inspected weekly to ensure integrity, and an inspection log is maintained or inspections are logged in the closure logbook
- Containers are clearly marked with hazardous waste labels or with labels identifying the waste as RCRA closure-generated waste to be shipped or characterized, as appropriate
- Spill control equipment is provided adjacent to the container storage area.

For purposes of this closure, the facility will be defined as the areas immediately south and east of the building as posted, including the waste container storage area (CPP-2716) located north and east of the CPP-603 facility (Figure 2-1). For purposes of this closure, the facility may include the area shown in Figure 2-1. Waste and waste containers may be stored within the facility during closure activities and will be managed in accordance with the requirements of IDAPA 58.01.05.006 (40 CFR 262) (e.g., secondary containment and container compatibility with waste and treatment process) until solidification has occurred (an extension to the 90-day accumulation period is being requested). Waste and waste containers will be removed from the facility prior to closure certification.

Provisions will be taken, as necessary, during closure to prevent possible failures of the waste containers (e.g., extreme temperature changes). Such provisions may include management of the containers within a temporary enclosure during inclement weather, or other appropriate controls, as determined necessary. Grouting activities will be conducted within a controlled environment meeting applicable RCRA requirements. Once grouted, the containers may be managed within the treatment area as defined above, until the grout has cured and treatment has been confirmed.

Hazardous waste shipments will be manifested in accordance with the requirements of IDAPA 58.01.05.006 (40 CFR 262, Subpart B) and applicable U.S. Department of Transportation regulations (49 CFR 172, 173, 178, and 179). Such manifest will include the land disposal notification required in IDAPA 58.01.05.011 (40 CFR 268.7).

Piping and ancillary equipment managed as RCRA-contaminated/mixed RCRA-contaminated debris will be removed, sized, and placed in approved waste shipping containers and transported to a RCRA-permitted TSDF for treatment and subsequent disposal. Removal of HWMA/RCRA-regulated piping may necessitate the removal of piping/components that are not subject to closure. Such piping/components will be removed, characterized, and managed in accordance with the HWD. Disposition of such piping shall not be a criterion for closure certification.

Decontamination of piping that will remain in place will be performed iteratively, as necessary, to minimize the volume of waste generated during closure activities. Rinsate solutions generated during decontamination activities will be managed based on a completed HWD.

Information regarding waste management during closure activities will be provided to the independent PE for closure certification and will be maintained as part of the project file.

5.6 Closure Documentation

Closure methods and attainment of the closure performance standards for the VES-SFE-106 tank system will be documented by performing the following:

- Closure activities will be monitored and reviewed by an independent, registered PE. Following successful completion of closure activities, the PE will certify that the closure was performed in accordance with the DEQ-approved closure plan.

- Information related to successful implementation of closure activities will be recorded or documented and provided to the PE, as requested, to support closure certification. Successful demonstration of achieving closure performance standards will require documentation of the following:

    - Waste removal and disposition, including hazardous waste manifests, waste disposal disposition forms, inspection logs, etc. (as appropriate)

    - Documentation of the removal, management, and disposition of system components identified in the approved closure plan

    - Validated sampling data and data quality assessment report showing that rinsates meet the site-specific action levels specified in this closure plan

    - Documentation of the integrity testing of buried piping

    - Validated analytical data from soil samples

    - Documentation of the removal, management, and disposition of closure-derived waste.

6. CLOSURE SCHEDULE

Table 6-1 identifies the closure schedule that will be initiated following DEQ approval of this closure plan. This schedule reflects the time required for conducting closure activities and submitting information to the PE for certification.

IDAPA 58.01.05.009 (40 CFR 265.113) requires waste removal activities to be completed 90 days from the approval of the closure plan and closure to be completed within 180 days from the initiation of closure activities. An extension to these time periods is being requested at this time, pursuant to IDAPA 58.01.05.009 (40 CFR 265.113), to ensure that data of adequate quality are collected to demonstrate compliance with the closure performance standard. A 180-day extension to the 90-day hazardous waste removal period is requested at this time to protect worker health and to adequately perform waste removal and disposition activities. An extension to the 180-day closure period is also requested to protect human health and to adequately perform closure activities. Waste removal, treatment, and closure activities cannot be completed within these time frames due to several factors including, but not limited to, the following:

- The need to provide radiological contamination controls to prevent the spread of contamination
- The INL Site health and safety requirements for specific issues within the facility such as the need for fall protection, and working in confined spaces
- The time necessary for the analytical laboratories to complete analysis of samples and data validation, receive analytical results, and complete data quality assessment, as specified in the quality assurance project plan (DOE-ID 2004b) to determine if the closure performance standard has been met
- Complexities associated with removal and disposition of mixed wastes, including proper waste packaging, transport, and disposal issues.
- Treatment of the solids removed from the VES-SFE-106 tank system (described in Subsection 5.1) will require approximately 270 days to complete. Treatment will be conducted using a semicontinuous batch waste treatment process consisting of the following activities:
    - Solids will be slurried to containers
    - Samples of the waste stream will be collected and analyzed, as necessary, to confirm grout recipe
    - Grout will be added to the containers
    - The grout will be allowed to cure
    - A demonstration that the final waste form meets LDR treatment standards and the disposal facility waste acceptance criteria will be completed per the requirements of IDAPA 58.01.05.012 [40 CFR 268.7(a)(5)].

Table 6-1. Tank system closure schedule.

Activity	Subsection in Closure Plan	Completion
DEQ approval of closure plan		Day 0
Complete installation of VES-SFE-106 solids removal system	5.1	Day 410
• Install solids removal pump through the tank manway		
• Install pump piping and spray nozzles		
Remove and treat non-debris waste present in the VES-SFE-106 tank:	5.1	Day 775
• Mobilization of waste		
• Transfer of waste to treatment container		
• Stabilization of waste based on pre-determined grout "recipe"		
• Waste form sampling/characterization		
Removal of VES-SFE-106 tank located in the CPP-648 tank vault	5.2	Day 970
Removal of VES-SFE-106 associated piping and equipment located in the CPP-648 and CPP-603 buildings. Decontamination of associated piping and equipment that is to remain in place:	5.3	Day 1,030
• Removal of ancillary piping and equipment located within the tank vault, CPP-648, and CPP-603		
• Integrity evaluation of non-secondarily contained piping identified in Table 5-4		
• Decontamination or removal of piping identified in Table 5-4		
• Collection of closure certification samples, including laboratory analysis, data validation, and data quality assessment		
• Visual inspection of decontaminated piping		
Removal of VES-SFE-106 vault:	5.2	Day 1,140,
• Excavation of and removal of tank vault		
• Collection of soil samples, including laboratory analysis, data validation, and data summary report		
Waste management activities complete:		Day 1,170
• Disposal of all closure-generated wastes		
Closure activities complete		Day 1,200
PE and owner/operator certification submitted to DEQ		Day 1,260[a]

a. If closure activities are completed ahead of the proposed schedule, the independent, Idaho-registered PE will submit the closure certification to DEQ within 60 days of the completion of closure activities. The subsequent approval from DEQ of the closure certification will be received within 60 days of this submittal.

Quarterly reports summarizing closure activity progress will be submitted to the DEQ by April 30, July 31, October 31, and January 31 of each year for the previous quarter. Quarterly progress reporting to DEQ will commence on the first of the aforementioned dates following Day 0.

7. CLOSURE PLAN AMENDMENTS

The conditions described in IDAPA 58.01.05.009 (40 CFR 265.112), "Closure Plan; Amendment of Plan," will be followed to implement changes to the approved closure plan. Should unexpected events during the closure period require modification of the approved closure activities or closure schedule, the closure plan will be amended within 30 days of the unexpected event. A written request detailing the proposed changes and the rationale for those changes, and a copy of the amended closure plan will be submitted to DEQ for approval or DEQ will be otherwise notified. Minor changes to the approved closure plan, which are equivalent to or do not compromise the closure requirements and performance standards identified in the approved closure plan, may be made without prior notification to DEQ. Minor changes will be identified in the documentation supporting the independent PE certification.

8. CERTIFICATION OF CLOSURE

Within 60 days of completing the closure activities, a certification of closure of the VES-SFE-106 tank system will be completed, in accordance with IDAPA 58.01.05.009 (40 CFR 265.115), by an independent, registered PE to the operating contractor and the U.S. Department of Energy Idaho Operations Office. The PE and owner/operator signatures on the closure certification, which will be submitted to the DEQ, will document the completion of closure activities in accordance with the approved closure plan and State of Idaho HWMA/RCRA requirements. This closure certification may also identify any minor changes to the closure plan made without prior approval of the DEQ. Closure of the VES-SFE-106 tank system will be considered complete upon receipt of written acceptance issued by the DEQ. The VES-SFE-106 tank system is not a hazardous waste disposal facility, and therefore, a "Notice in Deed" and a survey plat are not required.

9. COST AND LIABILITY REQUIREMENTS

The federal government, as owner of the INL Site, is exempt from the requirements to provide cost estimates for closure, to provide a financial assurance mechanism for closure, and regarding state-required mechanism and state assumption of responsibility per IDAPA 58.01.05.009 [40 CFR 265.140(c)]. The federal government, as owner of the INL Site, is also exempt from liability requirements.

10. REFERENCES

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40 CFR 262, "Standards Applicable to Generators of Hazardous Waste," *Code of Federal Regulations*, Office of the Federal Register, as amended.

40 CFR 265, "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," *Code of Federal Regulations*, Office of the Federal Register, as amended.

40 CFR 268, "Land Disposal Restrictions," *Code of Federal Regulations*, Office of the Federal Register, as amended.

42 USC 6901 et seq., 1976, "Resource Conservation and Recovery Act of 1976," as amended.

42 USC 9601 et seq., 1980, "Comprehensive Environmental Response, Compensation, and Liability Act of 1980," as amended. (NOTE: The 1986 amendment is cited as "Superfund Amendments and Reauthorization Act of 1986," [SARA].)

49 CFR 172, "Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, and Towing Requirements," *Code of Federal Regulations*, Office of the Federal Register, as amended.

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IDAPA 58.01.05.009, "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities," Idaho Administrative Procedures Act, State of Idaho Department of Environmental Quality Rules, as amended.

IDAPA 58.01.05.011, "Land Disposal Restrictions," Idaho Administrative Procedures Act, State of Idaho Department of Environmental Quality Rules, as amended.

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